PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 114881/ROB	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. **PCT/AU2003/000706**	International Filing Date *(day/month/year)* 6 June 2003	Priority Date *(day/month/year)* 7 June 2002
International Patent Classification (IPC) or national classification and IPC **Int. Cl.** [7] A61P 27/06; G01N 33/483; A61K 31/192, 31/196, 38/17		
Applicant UNIVERSITY OF TECHNOLOGY, SYDNEY et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

   ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of sheet(s).

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand 11 December 2003	Date of completion of the report 15 September 2004
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer **JASON MACKENZIE** Telephone No. (02) 6283 7934

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/AU2003/000706

I. Basis of the report

1. With regard to the **elements** of the international application:*

- [X] the international application as originally filed.
- [ ] the description, pages , as originally filed,
  pages , filed with the demand,
  pages , received on with the letter of
- [ ] the claims, pages , as originally filed,
  pages , as amended (together with any statement) under Article 19,
  pages , filed with the demand,
  pages , received on with the letter of
- [ ] the drawings, pages , as originally filed,
  pages , filed with the demand,
  pages , received on with the letter of
- [ ] the sequence listing part of the description:
  pages , as originally filed
  pages , filed with the demand
  pages , received on with the letter of

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language which is:

- [ ] the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- [ ] the language of publication of the international application (under Rule 48.3(b)).
- [ ] the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- [ ] contained in the international application in written form.
- [ ] filed together with the international application in computer readable form.
- [ ] furnished subsequently to this Authority in written form.
- [ ] furnished subsequently to this Authority in computer readable form.
- [ ] The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- [ ] The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. [ ] The amendments have resulted in the cancellation of:
   - [ ] the description, pages
   - [ ] the claims, Nos.
   - [ ] the drawings, sheets/fig.

5. [ ] This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report*

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	**76-113**	**YES**
	Claims	**1-75**	**NO**
Inventive step (IS)	Claims	**76-103**	**YES**
	Claims	**1-75, 104-113**	**NO**
Industrial applicability (IA)	Claims	**1-113**	**YES**
	Claims		**NO**

2. Citations and explanations (Rule 70.7)

Citations:

D1 Haefliger et al. (identified in the ISR)

D2 Ferrari-Dileo et al. (identified in the ISR)

D3 Zschauer et al. (identified in the ISR)

D4 Anderson et al. (identified in the ISR)

D5 Delaey et al. (identified in the ISR)

Novelty (N) claims 1-75

D1 provides a method of identifying a compound that modulates pericyte function and/or contractile state, wherein a pericyte is cultured on a silicone membrane, before the application of a test compound (see the whole document, particularly the abstract, materials and methods, and Figures 1-2). Therefore claims 45, 46, and 49 are deprived of novelty. Furthermore, the appended features of appended claims 47-48 and 50-75 are not considered to import any novelty.

D2 provides a method of identifying a compound that modulates pericyte function and/or contractile state, wherein a pericyte is cultured on an elastic silicone surface, before the application of a test compound (see the whole document, particularly the abstract, materials and methods, and Figures 1-2). Therefore claims 45, 46, and 49 are deprived of novelty. Furthermore, the appended features of appended claims 47-48 and 50-75 are not considered to import any novelty.

D3 provides a method of identifying a compound that modulates pericyte function and/or contractile state, wherein a pericyte is cultured on an elastic silicone surface, before the application of a test compound (see the whole document, particularly the abstract, materials and methods, and Figures 1-4). Therefore claims 45, 46, and 49 are deprived of novelty. Furthermore, the appended features of appended claims 47-48 and 50-75 are not considered to import any novelty.

D4 provides a method of identifying a compound that modulates pericyte function and/or contractile state, wherein a pericyte is cultured on an elastic silicone surface, before the application of a test compound (see the whole document, particularly the abstract, materials and methods, and Figures 1-2). Therefore claims 45, 46, and 49 are deprived of novelty. Furthermore, the appended features of appended claims 47-48 and 50-75 are not considered to import any novelty.

D5 discloses the ability of retinal tissue to modulate arterial blood vessel function in the isolated retina, following exposure to various vasoconstrictors. Ultimately, a method of identifying compounds that modulate retinal arterial tone is provided, and the document is considered to deprive claims 1, 2, and 7 of novelty. Furthermore, the added features of appended claims 3-6 and 8-44 are not considered to import any novelty.

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of Box V

Inventive step (IS) claims 1-75 and 104-113

Claims 1-75 are already found to be wanting of novelty, and as such, are also deprived of an inventive step.

D1 provides a method of testing and identifying compounds that may selectively improve circulation in the retina or the optic nerve head capillary network. D1 may be combined with any of D2-D4 in order to provide compounds suitable for treating ocular disorders having a vascular component related to pericyte function. Therefore claims 106-111 are not considered to comprise an inventive step.

Alternatively, D1-D4 may be considered to individually deprive claims 105-112 of an inventive step, in that methods of testing pericyte function are provided following administration of vasoactive compounds, with a view to treating glaucoma and related pathologies.

D5 provides a method of testing and identifying compounds that modulate retinal arterial tone. D5 also teaches that retinal tissue may release a soluble factor (retinal relaxing factor) that regulates arterial smooth muscle cell (SMC) function, and discusses this factor in relation to various retinal pathologies (see the last two paragraphs of the discussion). Nonetheless, a method of altering arterial contraction using endogenous factors is provided. The skilled artisan may take the method of D5 to identify vasoactive compounds that can be used in treating retinal pathologies attributed to altered blood vessel function, and therefor claims 104 and 112 are deprived of an inventive step. Furthermore, the added features of appended claims 105 and 113 are not considered to import any patentability.

Novelty (N) and Inventive Step (IS) claims 76-103

None of the cited documents appear to disclose or suggest the methods of detecting impaired pericyte and/or retinal blood vessel function as defined in claims 76-103.

Industrial Applicability (IA)

Claims 1-113 appear to be industrially applicable.